

REMARKS/ARGUMENT

I. General

Claims 26 and 29-56 remain pending in the patent application. Independent claims 26, 52 and 55, have been amended to more particularly point out the subject matter of the presently claimed invention. All claims stand again rejected, on grounds substantially identical to those raised in the previous office action.

The Office Action states that "Applicants' arguments with respect to claims 26, and 29-50 have been considered but are moot in view of the new grounds of rejection." Because the rejections look virtually identical to those raised against the previous amendment, Applicants respectfully request clarification on how the grounds of rejection are new and specifically request that its arguments in this paper be duly considered.

The Examiner has alluded to 37 C.F.R. 1.121(c), stating that "Applicant on page 3 cancels claims 1-26." The language to which the Examiner refers merely identified a set of claims that had previously been canceled; but it plainly included an error of a typographic nature, followed immediately by an amended claim 26, from which many pending claims depend. In this paper, the identified previously canceled claims on page 3 are claims 1-25. Claim 26 has remained pending in the application.

I. Priority Claim Under 35 USC § 119

The present application claims priority benefit under 35 USC § 119 to German patent applications 10038441.2, 10038440.4, and 10038439.0, all filed August 7, 2000. Applicants have submitted certified copies of the priority documents on May 19 of this year.

The Office Action does not appear to acknowledge the priority claim or Applicant's request.

Applicants therefore respectfully renew their request that formal acknowledgment of this claim and that benefit of this priority claim be accorded and made of record.

II. Note Regarding the Rejections

Despite their amendments and twenty four page response of June 2, 2004, to the previous office action, substantially identical grounds for rejection have been raised in the pending office action. For this reason, Applicants incorporate by reference in their entirety the arguments from their June 2, 2004, Amendment.

III. Previous Rejection Under 35 U.S.C. § 112

Applicant acknowledges, with thanks, that the rejections under 35 U.S.C. § 112 have been withdrawn.

IV. Rejections Under 35 U.S.C. § 102(e)

Claims 26, 32, 38, 41, 43, and 49-56 stand rejected as anticipated by U.S. 6,412,106 to Leask et al. (hereinafter Leask). A rejection on the basis of anticipation requires each and every element of the claim, properly construed, to be identically disclosed by the single, cited reference. Applicants respectfully submit that the Leask patent fails to show each and every limitation of the claim, both prior to and following the present amendment.

Claims 26, 52 and 55 have been amended to more particularly point out that the present invention is directed to the field of industrial control. As presently written, the body of the claims now includes a recitation to this effect, which supplements and underscores the distinction of the claimed subject matter over the applied references.

By way of an overview, the claims are all directed to methods for debugging programs for industrial controllers. As described in the previous amendment, industrial software (for the field of industrial control) is a specialized field, with particularized problems not understood or addressed by workers in other fields. The problems identified and addressed by the present invention, such as those involving engineering versus run-time systems, are not addressed by Leask. Leask is not analogous art and, as discussed at length below, neither discloses nor suggests the claimed methods. The rejection has failed to show how, in the absence of guidance provided by the pending application, someone in the field of industrial control would look to a non-analogous reference like Leask for any guidance.

Similarly, the rejection fails to establish how Leask, or any of the references, would permit whatever they disclose to be implemented in the field of industrial control.

i. Claim 26

Claim 26, as again amended, is directed to a method of debugging programs in industrial controllers, where graphical elements are linked using an editor in order to form a graphical flowchart. The method comprises preparing a debugging process, for an industrial control program, based on the graphical flowchart and assigning a suspend command to each graphical element. The debugging process then commences and continues until a suspend command is reached. Once the suspend command has been reached, the location of the flowchart element corresponding to the suspend command is displayed. The method then continues a task corresponding to a graphical element of the flowchart, that has been suspended by a suspend command, using a task control mechanism of the run-time system. The process then proceeds until the next suspend command is reached.

This amendment is supported by the specification at paragraph 15 and incorporates the limitation of previously cancelled claim 27. As described in that portion of the specification, and as now called out in the claim, the task control mechanism can be continued by a task control mechanism of the run time system. This feature permits regression testing, for example.

Leask neither discloses nor suggests the limitations of the amendment as claimed, nor does it provide a disclosure that would permit a worker in the field of industrial control to implement what is claimed or enjoy its advantages.

Nowhere does Leask identify anything to do with programming of industrial controllers having engineering and run time systems, nor any control mechanism of a run time system having to do with continuing of a task that has been stopped by a suspend commands. The portion of Leask relied on in support of the rejection of the first element of claim 26, column 7, lines 8-20, have nothing to do with debugging of industrial control software, which will be executed on a run-time system of an industrial controller. Rather, the applied portions of Leask merely relate to a graphical debugging environment at an application program level and are devoid of any disclosure of industrial controllers, having engineering and run-time systems, or how one is to program them.

Leask, moreover, does not teach or suggest assigning a suspend command to each graphical element of the programming flowchart, as recited in claim 26 prior to the present amendment. The passage relied upon in support of this proposition, column 7, lines 29-33

(which the Examiner has merely repeated without addressing Applicants' arguments) and column 19, lines 1-7, simply do not disclose or suggest the recited limitation. The second passage vaguely refers to suspending an application program at "any given entry point." This does not teach assigning a suspend command to each graphic element, as claimed.

Still further, Leask does not disclose or in any way suggest continuation of a suspended task using a task control mechanism of a run-time system of an industrial controller. The cited passage merely refers to the application program being resumed. The rejection thus fails to show, as required, that the claimed invention is identically disclosed. It also fails to supply or in any way suggest the missing disclosure.

Because Leask does not describe or suggest the invention as claimed, it cannot anticipate (nor does it suggest or render obvious) claim 26, which is therefore respectfully submitted to be allowable.

ii. Claim 32

Claim 32, directly dependent from claim 26, is submitted to be allowable for the same reasons.

Moreover, claim 32, as amended, recites a debugging interface available to a user at levels comprising at least two of the group consisting of the structured textual language level, the pseudo-code level, and the processor code level.

Leask neither discloses nor suggest such features. Column 5, lines 51-57 of Leask says nothing whatever about any of the recited claim limitations. Claim 32, for these reasons, is submitted to be allowable.

iii. Claim 38

Claim 38 also directly depends from allowable claim 26 and is submitted to be allowable on the same grounds.

Claim 38 is directed to a programming language command present in a motion control flowchart view, where the programming language command consists of a loop and a parallel branch. As recited in the Office Action, Figure 3, item 34, of Leask allegedly describes a graphical development environment presented to a developer when designing a call flow. Nowhere does Leask's graphical development environment describe or suggest a motion control

flowchart view, much less, providing associated commands that relate to the motion control flowchart view.

iv. Claim 41

Claim 41 directly depends from claim 26 and is submitted to be allowable on the same grounds.

Claim 41 is, moreover, directed to function blocks, wherein the function blocks are combined into modules that in turn are presented as function blocks in a display associated with the motion control flowchart. Leask, including col. 11, lines 60-67, and col. 12, lines 1-5 relied on in support of the present rejection, fails to describe or suggest function blocks, much less function blocks that are associated with a flowchart display. In the field of industrial control “function block” is a term of art. Since Leask has nothing to do with industrial controllers, this term of art is not contemplated by Leask.

For these reasons, claim 41 recites patentable subject matter and should be allowed.

vi. Claim 43

Claim 43 directly depends from claim 41 and is submitted to be allowable for the same reasons.

Moreover, claim 43 is directed to function blocks, wherein the function blocks for the allocation of variables in the display associated with the motion control flowchart comprise multiple instructions. As recited in the Office Action, col. 11, lines 60-63, of Leask allegedly purports that each displayed icon represents underlying textual source code for carrying out a function. Neither the recited passage, nor any aspect of the Leask reference discloses or suggests “function blocks,” much less function blocks comprising multiple instructions.

For these reason, claim 22 is directed to patentable subject matter, and is, therefore, submitted to be allowable.

vii. Claim 49

Claim 49 directly depends from claim 26 and is submitted to be allowable on the same grounds.

In addition, claim 49 recites that the steps a) through c) or claim 26 are triggered in a collective step. This is said to be disclosed at column 19, lines 1-15 of Leask, but that passage says nothing of the sort. Applicant requests that the Examiner clarify how he intends the cited passage be read and applied, because on its face, it has apparently nothing whatever to do with the recited limitation.

Applicants therefore respectfully request that the rejection be withdrawn.

viii. Claim 50

Claim 50 directly depends from claim 26 and is submitted to be allowable on the same grounds.

Moreover, claim 50 is directed to displaying a currently processed graphical element of the flowchart program during the processing of the flowchart program. Col. 16, lines 25-29 of Leask, as recited in the Office Action, allegedly describes highlighting each icon of a program as the develop steps thorough each icon. Applicants' graphical elements are displayed during processing without the additional need for a developer to step through the program. Claim 50 is thus allowable.

ix. Claim 51

Claim 51 depends directly from claim 26 and is allowable for the same reasons.

Claim 51 stands rejected on the same grounds as the ones that were raised in rejecting claim 32 and is now submitted to be patentable for the same arguments set forth above in connection with claim 32.

x. Claim 52

Claim 52 is an independent claim which stands rejected on the same grounds as those that were leveled at claim 26 and is patentable for at least the same reasons.

In addition, claim 52 now recites that the industrial controller which runs the code being debugged have a plurality of code levels, a problem addressed and claimed by Applicants, but

not addressed by Leask or the other art of record. For this additional reason, claim 52 is submitted to be allowable.

xi. Claim 53

Claim 53 depends from claim 52 and is submitted to be patentable for the same reasons.

In addition, claim 53 recites that the programming code comprises a plurality of code levels and that at least a subset of the recited debugging processes correspond to respective ones of the code levels, among other features.

This is said to be shown by Leask at column 16, lines 30-45, does not refer to code levels corresponding to debugging processes. Rather, it refers to levels of “call flow,” which apparently relates to the telecommunications problem domain and not to the code. This underscores that Leask bears no relation to the specific field of industrial control with which this and the other claims are concerned.

In fact, Leask states that the graphical debugging environment allows a programmer to utilize graphical debugging tools to perform “highlevel debugging.” This focus on a single level (column 12, lines 34-36) actually teaches away from the claimed invention.

For these reasons, claim 53 is submitted to be patentable and should be allowed.

xii. Claim 54

Claim 54 depends from claim 52 and is submitted to be allowable for the same reasons.

In addition, claim 54 recites that the plurality of code levels comprises a pseudo-code level and a debugging process is prepared for the pseudo-code level.

As discussed elsewhere in this Amendment, Leask has nothing to do with pluralities of code levels. It also says nothing about pseudo code levels, as claimed and as shown, for example, in Figure 3 of the Application.

The Examiner has based his rejection on the unsupported assumption that “pseudo code level” is “equivalent to source code level as taught [in Leask] at column 16, lines 30-35. But

Figure 3 of the Application, and various portions of the text, exposes the fallacy in the reasoning relied on in rejecting claim 54. There, pseudo code level is depicted beneath the level of the compiler, much less the level of the structured text (ST), which would correspond more closely to "source code."

For this additional reason, the rejection is misplaced and should be withdrawn.

xiii. Claim 55

Claim 55 is an independent claim submitted to be patentable for the reasons set forth for claim 52, with which it shares some similarities.

In addition, as it stands rejected for the reasons leveled against claim 26, it is submitted to be allowable for the same reasons as set forth above for claim 26.

xiv. Claim 56

Claim 56 depends from claim 55 and is submitted to be patentable for the same reasons.

Similarly, as it stands rejected for the reasons leveled against claim 32, it is submitted to be allowable for the same reasons as set forth above for claim 32.

V. Rejection Under 35 U.S.C. § 103(a) Over Leask and ISaGRAF

Claims 29-31, 36, 37, 45, and 47 have been rejected as allegedly unpatentable over Leask in view of "ISaGRAF Overview" by AlterSys Inc., March 2001 (hereinafter AlterSys). These arguments were made by Applicants in their amendment of June 4, 2004, which appear to have been overlooked.

Applicants respectfully requests that its arguments be considered and submit that, upon due consideration, these rejections should be traversed on the basis of the following arguments.

A rejection under 35 U.S.C. § 103(a) requires the establishment of a *prima facie* case that the claimed subject matter, including all claim elements, would have been obvious to a person having ordinary skill in the art on the basis of either a single prior art reference or more than one

reference properly combined. As no such *prima facie* case has been established for these claims, Applicants respectfully traverse these rejections, as set forth more fully below.

As discussed above, Leask is not analogous art.

In addition, and as pointed out in Applicants' previous amendment, the claims of the present application are entitled to their German priority date, which has been acknowledged on the corrected filing receipt as August 7, 2000. Applicant has pointed out above that the certified priority documents have been submitted and have requested formal acknowledgment of entitlement to the benefit of the German priority dates.

On the basis of this entitlement, the AlterSys ISaGRAF document, dated March 3, 2001, is not available as a reference against the pending claims. For this reason, all rejections made in part over this reference should be withdrawn.

In addition, it is submitted that the combination of Leask and the AlterSys reference is improper and could not be made without the benefit of hindsight based on applicants' invention.

The rejections of claims 29-31, 36, 37, 45, and 47 is submitted to be improper for the additional reasons set forth below.

i. Claim 29

Claim 29 depends indirectly, as amended, from claim 26 and is submitted to be allowable on the same grounds.

Furthermore, claim 29 is directed to a task control mechanism of the run time system comprising breakpoint debugging and variables that can be pre-assigned by the user in the engineering system. The task control mechanism also further comprises pre-assigning variables to the breakpoints.

Leask neither discloses nor suggests a run time system, much less a task control system of a run time system. As described above, Leask is not analogous art and has nothing to do with industrial control or its various concepts, such as are recited in the pending claims. Nor does the AlterSys reference describe or suggest a task control mechanism of the run time system.

As both references fail to disclose "a task control mechanism of the run time system," applicants respectfully submit that no *prima facie* case of obviousness has been made out and that claim 29 is allowable over the art of record.

ii. Claim 30

Claim 30 depends directly from claim 29 and is submitted to be allowable for the same reasons.

Claim 30 is directed to variable pre-assignments in the task control mechanism, where the variable pre-assignments are performed by programs of the run time system other than the task control mechanism. Applicants respectfully submit that neither of the cited references describe nor suggest all of the limitations of the claim including variable pre-assignments in the task control mechanism. The rejection contends that the AlterSys reference teaches that “debugging is done by means of debugging tools.” This, however, is not what is being claimed. The claim specifically calls out that variable pre-assignments are performed by programs of the run time system. The AlterSys reference, which at any rate is not available as prior art, in no way discloses or suggests these limitations.

Applicants respectfully submit that for the foregoing reasons, no *prima facie* case of obviousness has been made out. Claim 30 recites allowable subject matter.

iii. Claim 31

Claim 31 depends directly from claim 26 and is submitted to be allowable for the same reasons.

Moreover, claim 31 further recites generating a structured textual language from the flowchart, and converting the structured textual language into a processor-independent pseudo-code. The processor-independent pseudo-code is then loaded into a controller and converted into executable processor code.

The AlterSys reference does not describe or suggest generating different levels of code from a higher level of abstraction. For example, page 6, lines 6-12, of the AlterSys reference expresses an automation engineer’s preference for Structured Text (ST) for complex procedures, rather than graphical languages. This recited passage of AlterSys does not in any way describe or suggest generating another code level from Structured Text (ST), or converting a code level to Structured Text (ST). Similarly, page 13, lines 15 and 17, of the AlterSys reference also fails to describe or suggest the conversion of code to another lower level of abstraction. It merely refers to generating a particular code without even attempting to describe how and from what the code was generated. Moreover, the reference is referring to re-compiling and linking C code files in

order to obtain executable files. In AlterSys, there is no suggestion or motivation for converting between flowchart, structured text, pseudo-code, and executable processor code, as claimed by applicants. Therefore, applicants respectfully submit that since no *prima facie* case of obviousness has been made, claim 31 is independently patentable over the art of record.

iv. Claim 36

Claim 36 depends directly from claim 26 and is submitted to be allowable on this basis.

As Leask fails to describe or suggest applicants' method of claim 26, it would not have been obvious to incorporate the structured text language according to IEC 6-1131 in the debugging process of claim 26. For these reasons, because the AlterSys reference is not available as prior art, and because the putative combination of references is improper, claim 36 is submitted to be allowable.

v. Claim 37

Claim 37 depends directly from claim 36 and is submitted to be allowable on the same grounds. Claim 37 is directed to providing a user with an opportunity to switch between structured textual language, contact plan, and function plan as a form of representing formulation conditions. Even assuming the AlterSys reference were available as prior art and could be properly combined with Leask – which it cannot – page 4, Figure 1, of AlterSys fails to describe or suggest such a form of representing formulation conditions. Rather, Figure 1 allegedly describes dividing the process cycle into well-defined steps, expressly for a Sequential Function Chart (SFC). There is no description or suggestion or switching between structured textual language, contact plan, or function plan. Applicants respectfully submit that no *prima facie* case of obviousness has been made out and that claim 37 is accordingly allowable over the art of record.

vi. Claim 45

Claim 45 depends from allowable claim 26 and is allowable for the same reasons. Claim 45, moreover, recites graphical elements of the flowchart that are positioned automatically. Page 4, lines 11-12, of the AlterSys reference, relied on in support of the rejection, does not disclose or suggest positioning flow chart elements automatically. Rather, it merely refers to

automatically rearranging the chart itself to provide a so-called clean display. Rearranging the actual chart for display purposes is ***not*** equivalent to automatically positioning the graphical elements of a flowchart. Application, paragraph 35. For this further reason, no *prima facie* case of obviousness has been made out. Claim 45 is, therefore, submitted to allowable.

VI. Rejection Under 35 U.S.C. § 103(a) Over Leask and Hastings

Claim 33 has been rejected as being unpatentable over Leask, in view of U.S. 5,563,526 to Hastings (hereinafter Hastings). Applicants respectfully submit that this rejection is traversed on the basis of the following arguments.

i. Claim 33

Claim 33 depends directly from claim 26 and is submitted to be allowable for the same reasons. In addition, claim 33 recites the provision of programming language commands in the flowchart editor that are a function of “configuration of hardware” associated with the industrial controller. Hastings, as described in the Office Action, allegedly describes a general purpose programmable electrical chip that is said to be capable of being programmed to perform both analog and digital circuit functionalities. A set of software tools including an editor are used to configure the chip, which may for example comprise a field programmable device.

As Applicant has already argued, the combination of Leask and Hastings is improper. No motivation has been provided as to why a person skilled in the art of industrial control software would look to the integrated circuit field without some definite suggestion in the art to do so. Even if Hastings disclosed something of relevance for the present claim, which it does not, one would need to apply impermissible hindsight to pick and choose among the teachings of the references to arrive at the claimed invention.

Applicant requests that the Examiner formally consider on the record this renewed argument.

At any rate, Hastings does not disclose or suggest providing programming language commands in the flowchart editor as a function of configuration of hardware associated with an industrial controller.

For the various foregoing reasons, no *prima facie* case of obviousness has been made out. Claim 33 is therefore submitted to be separately patentable and is, therefore, allowable.

VII. Rejection Under 35 U.S.C. § 103(a) Over Leask and Siemens Reference

Claims 34, 35, 46, and 48 have been rejected as being unpatentable over Leask, in view of “Siemens Industrial Software” by E&M Products., April 2001 (hereinafter Siemens reference). Applicants respectfully submit that these rejections are traversed on the basis of the following arguments.

As described above in connection with the AlterSys reference, the claims of the present application are entitled to a priority date of August 7, 2000. The Siemens reference is therefore not available as a prior art reference.

Moreover, the present application is commonly owned with the subject matter of the Siemens reference, eliminating it as a reference under 35 USC § 103(c). The subject matter of the claims of the present application were clearly invented before the April 2001 date of the Siemens reference; but if the PTO were to impermissibly deny applicants’ their priority benefit, the reference would nevertheless be unavailable as against the application under this statute.

The combination of Leask and the Siemens reference is also improper, involving differing unrelated fields and lacking any motivation in the absence of impermissible hindsight.

The rejections are unfounded for various additional reasons.

i. Claim 34

Claim 34 depends directly from claim 26 and is allowable for the same reasons.

In addition, claim 34 recites the generation of additional graphical elements in the motion control flowchart representation by converting user-defined structured text subprograms of the textual language into graphical elements. The graphical elements comprise function interfaces of the corresponding structured text subprograms. The Siemens reference does not describe or suggest converting user-defined structured text subprograms into graphical elements. Moreover, this reference does not describe or suggest graphical elements that comprise function interfaces that correspond to the structured text subprograms. The text at page 6, lines 6-13, of the Siemens reference merely suggests programming flow chart elements using structured text (ST), without referring in any way to a conversion step into graphical elements, or the existence of function interfaces that are associated with generated graphical elements. Application, paragraph 23.

Applicants respectfully submit that no *prima facie* case of obviousness has been made out and that claim 34 is allowable over the art of record.

ii. Claim 35

Claim 35 depends directly from claim 34 and is similarly allowable.

Claim 35 also recites the generation of graphical elements that are used as language elements of the motion control flowchart. Neither Leask nor the Siemens reference, whether alone or in combination, describes or suggests graphical elements that are generated from user-defined structured text subprograms, much less generated graphical elements that are used as language elements of the motion control flowchart. Claim 35 is therefore submitted to be allowable.

iii. Claim 46

Claim 46 depends directly from allowable claim 26 and is submitted to be allowable for the same reasons.

Furthermore, claim 46 is separately patentable on the grounds that it recites graphical elements of a flowchart that are automatically linked together. The Siemens reference neither discloses nor suggests such automatic linking of flowchart elements. Rather, the reference merely refers to automatic flowchart generation for certain languages such as Visual Basic, and does not in any way attempt to describe or suggest the “linking” of graphical elements. As indicated in the Office Action, Leask does not teach that graphical elements are linked together automatically. Therefore, neither Leask nor the Siemens reference describe or suggest the patentable features of claim 46. Since no *prima facie* case of obviousness has been made out, applicants submit that claim 46 is allowable over the art of record.

iv. Claim 48

Claim 48 is submitted to allowable as dependent from claim 31.

Moreover, claim 48 is directed to re-translation back into motion control flowchart representation by means of marks in the textual language. The cited references, whether alone or in combination, neither disclose nor suggest the invention as claimed. Page 6, lines 6-13, of the Siemens reference does not in anyway describe or suggest such re-translation using marks in the

textual language. As previously described, the Siemens reference merely refers to automatic flowchart generation for certain languages such as Visual Basic, and does disclose or suggest re-translation back into motion control flowchart representation, as recited in claim 48. Claim 48 is therefore submitted to be allowable over the art of record.

VIII. Rejection Under 35 U.S.C. § 103(a) Over Leask and Other References

i. Claim 39

The putative rejection of claim 39 indicated in the Office Action summary and on page 2, is not supported by any explanation or reasoning. It was previously rejected as being unpatentable over Leask, in view of U.S. 6,412,106 to Sara (hereinafter Sara), which was traversed in Applicant's previous Amendment.

As explained in the Amendment, claim 39 depends from claim 38 and, is, therefore, submitted to be allowable on the same grounds. Moreover, claim 39 is directed to initiating a parallel branch, wherein individual commands are initiated within a given interpolator cycle within a respective parallel branch.

To begin with, the combination of Leask and Sara is improper. They are not analogous art – Sara has to do with digital color television reproduction – and one of ordinary skill in the field of industrial software could not conceivably have alighted upon this reference, or Leask, or the combination of the particular features that are recited, without the benefit of impermissible hindsight. Even if combined, improperly, the combination neither discloses nor suggests the all of the limitations of the claimed invention.

Sara does not disclose the limitations the PTO relies on for the rejection. Col. 2, lines 45-53, of Sara neither discloses nor suggests a programming language command of a motion control flowchart, much less initiating a parallel branch within the such a flowchart. As indicated in the Office Action, Leask admittedly does not teach a parallel branch, wherein individual commands are initiated within a given interpolator cycle within a respective parallel branch. For the various foregoing reasons, no *prima facie* case of obviousness has been made out. Claim 39 is therefore is submitted to be separately patentable over the art of record.

ii. Claim 40

Claim 40 has been rejected as being unpatentable over Leask, in view of U.S. 6,295,606 to Messerges et al. (hereinafter Messerges).

As described in Applicant's previous Amendment, claim 40 depends from allowable claim 26 and is submitted to be similarly allowable. Claim 40, in addition, recites the setting of parameters for function blocks by mask input in the display associated with the motion control flowchart.

To begin with, the combination of Leask and Messerges is improper. As with Sara, they are not analogous art. Messerges relates to cryptography and, more particularly, to leakage attacks on microelectronic assemblies. One of ordinary skill in the field of industrial software could not have been expected to look to this field to identify solutions in his or her own field, nor would he or she look to Leask. No motivation has been identified as to why, or how, one would combine Leask and Messerges, or how one would pick and choose among their disclosures without relying, impermissibly, on Applicants' disclosure. Even if combined, improperly, the combination neither discloses nor suggests the all of the limitations of the claimed invention.

The passage of Messerges relied upon to support the rejection, col. 2, lines 64-67, fails to describe or suggest function blocks, much less setting parameters for the function blocks by mask input in the display associated with the motion control flowchart. For the various foregoing reasons, no *prima facie* case of obviousness has been made out. Claim 40 is, therefore, allowable.

iii. Claim 42

Claim 42 has been rejected as being unpatentable over Leask, in view of "PL Copen: Standardization in Industrial Control Programming" by Eelco van der Wal, October 1999 (hereinafter Van der Wal).

As explained in Applicants' previous amendment, claim 42 is dependent from claim 41 and is submitted to be allowable for the same reasons. Moreover, claim 42 recites modules that are interleaved in the display associated with the motion control flowchart. The passage from the Van der Wal reference relied upon in support of the rejection, page 33, does not describe or suggest combining function blocks into modules, much less interleaving these modules display associated with the motion control flowchart. Page 33 of Van der Wal merely refers to parallel

sequences in a sequential function chart. Moreover, the combination of Leask and Van der Wal is improper. They are from differing fields and there is no motivation to combine them, or to pick and choose among their disclosures to arrive at the claimed invention in the absence of Applicants' teachings. Even when combined, the references neither disclose nor suggest the claimed invention. Claim 42 is, therefore, submitted to be allowable over the art of record.

iii. Claim 44

Also, claim 44 has been rejected as being unpatentable over Leask, in view of U.S. 4,682,278 to Marquardt et al. (hereinafter Marquardt).

Applicants respectfully submit that these rejections are traversed on the basis of the following arguments.

As explained in Applicants' previous amendment, Claim 44 is dependent from allowable claim 41 and is submitted to be allowable for the same reasons.

The rejection over the combination of Leask and Marquardt, moreover, is misplaced. These references cannot be properly combined. Marquardt is from a non-analogous field, the field of turn-off thyristors. No motivation has been identified, nor is any available in the art, for combining Leask and Marquardt, or for picking and choosing among their disclosures in the absence of hindsight. The combination, though improper, would neither disclose nor suggest the claimed invention.

Moreover, the present invention was commonly owned with the Marquardt reference at the time it was made. The reference is therefore precluded, under 35 U.S.C. § 103 (a) from being applied as a reference against this application.

Claim 44 is directed to function blocks that represent functions that require a given period of time, which comprise advance conditions in the display associated with the flowchart. Marquardts fail to describe or suggest function blocks, much less function blocks that represent functions that require a given period of time comprise advance conditions in the flowchart display. Marquardt refers to a pulse generation device such as a monostable, where an input trigger signal generates a predetermined output pulse from the device. Since Marquardt and Leask, whether alone or in combination, fail to describe or suggest all of the features of claim 44,

they also fail to establish a *prima facie* case of obviousness. On these additional grounds, claim 44 is submitted to be allowable.

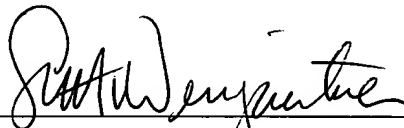
CONCLUSION

Upon entry of this Amendment, claims 26, 29-56 are pending in the application. Applicants submit that the claims, for the reasons set forth above, are in condition for allowance. Reconsideration and allowance are therefore respectfully requested.

If a fee is required, the Commissioner is authorized to charge the fee to Deposit Account No. 23-1703.

Dated: March 7, 2005

Respectfully submitted,



Scott T. Weingaertner
Reg. No. 37,756
Attorney for Applicants

Customer No. 007470
White & Case LLP
Direct Line: (212) 819-8404